

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 1997	Park: Shenandoah NP						
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Additional investigators or key field assistants (first name, last name, office phone, office email): <table border="0"> <tr> <td>Name: Dr. George Hornberger</td> <td>Phone: n/a</td> <td>Email: n/a</td> </tr> <tr> <td>Name: Dr. Jeff Raffensperger</td> <td>Phone: n/a</td> <td>Email: n/a</td> </tr> </table>		Name: Dr. George Hornberger	Phone: n/a	Email: n/a	Name: Dr. Jeff Raffensperger	Phone: n/a	Email: n/a
Name: Dr. George Hornberger	Phone: n/a	Email: n/a					
Name: Dr. Jeff Raffensperger	Phone: n/a	Email: n/a					
Permit#: SHEN1997AULH							
Park-assigned Study Id. #: unknown							
Project Title: Streamflow Generation And Flowpath Identification In An Upland Catchment With Transient Storage Capabilities							
Permit Start Date: Jan 01, 1998	Permit Expiration Date Jan 01, 1998						
Study Start Date: Jan 01, 1994	Study End Date Jan 01, 1997						
Study Status: Completed							
Activity Type: Research							
Subject/Discipline: Water / Hydrology							
Objectives: 1. Measure the hydrological and chemical (oxygen-18, silica, and chloride) response of a small headwater catchment to precipitation events and examine these responses in light of known mechanisms of streamflow generation.;2. Separate storm hydrographs into temporal and geographical source components.;3. Evaluate the reactivity of silica in the catchment and the usefulness of silica as a tracer.;4. Compare stream responses to values produced by a first-order mineral dissolution model coupled with a hillslope flow and transport model.							
Findings and Status: Water samples and stream discharge data were collected for several storm events of varying magnitude. The silica and oxygen-18 data indicate a predominance of old water (68 to 100 percent of total discharge). Lateral flow in the shallow subsurface was observed during most events. A rapidly forming, perched water table was observed within 100 m of the stream. Groundwater ridging was observed as a transient phenomenon within 5 m of the stream. The wide, relatively flat headwater region of the catchment appears to be a focal point for flow from a reservoir of inter-storm baseflow that extends up the sideslopes of the catchment.							
For this study, were one or more specimens collected and removed from the park but not destroyed during analyses? No							
Funding provided this reporting year by NPS: 0	Funding provided this reporting year by other sources: 0						
Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college							
Full name of college or university:	Annual funding provided by NPS to university or college this reporting year:						

n/a	0
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